*Please provide the following information, and submit to the NOAA DM Plan Repository.*

**Reference to Master DM Plan (if applicable)**

*As stated in Section IV, Requirement 1.3, DM Plans may be hierarchical. If this DM Plan inherits provisions from a higher-level DM Plan already submitted to the Repository, then this more-specific Plan only needs to provide information that differs from what was provided in the Master DM Plan.*

URL of higher-level DM Plan (if any) as submitted to DM Plan Repository:

## 1. General Description of Data to be Managed

### 1.1. Name of the Data, data collection Project, or data-producing Program:
NEPR Principle Component Analysis - NOAA TIFF Image

### 1.2. Summary description of the data:
This GeoTiff is a representation of seafloor topography in Northeast Puerto Rico derived from a bathymetry model with a principle component analysis (PCA). The area covered includes the shallow water area (0-60m deep) of the Northeast Ecological Reserves: including the waters off of Fajardo and Luqillo, to the Former Roosevelt Roads Navy Base, the Vieques Sound, La Cordillera Reserve, the Luis Pena Reserve, and the waters around Culebra Island. The PCA image was created using Envi 5.1, and is based on nine morphometric derivatives of the bathymetry, such as slope, curvature and rugosity. The bathymetry model was created by integrating soundings from several different sources ( 1900-2013), including high resolution coastal LiDAR, NOAA Single-beam and multibeam bathymetry, and historical lead line soundings, into a multi resolution (4m, 20m, 100m) depth model. The PCA image was used to delineate the different shallow water benthic habitats of NEPR.

### 1.3. Is this a one-time data collection, or an ongoing series of measurements?
One-time data collection

### 1.4. Actual or planned temporal coverage of the data:
2013-10 to 2013-11

### 1.5. Actual or planned geographic coverage of the data:
W: -65.759998, E: -65.168596, N: 18.446613, S: 18.196796

### 1.6. Type(s) of data:
*(e.g., digital numeric data, imagery, photographs, video, audio, database, tabular data, etc.)*
raster digital data

### 1.7. Data collection method(s):
*(e.g., satellite, airplane, unmanned aerial system, radar, weather station, moored buoy, research vessel, autonomous underwater vehicle, animal tagging, manual surveys, enforcement activities, numerical model, etc.)*

**1.8. If data are from a NOAA Observing System of Record, indicate name of system:**

**1.8.1. If data are from another observing system, please specify:**

**2. Point of Contact for this Data Management Plan (author or maintainer)**

**2.1. Name:**
NCCOS Scientific Data Coordinator

**2.2. Title:**
Metadata Contact

**2.3. Affiliation or facility:**
National Centers for Coastal Ocean Science

**2.4. E-mail address:**
NCCOS.data@noaa.gov

**2.5. Phone number:**

**3. Responsible Party for Data Management**
*Program Managers, or their designee, shall be responsible for assuring the proper management of the data produced by their Program. Please indicate the responsible party below.*

**3.1. Name:**
NCCOS Scientific Data Coordinator

**3.2. Title:**
Data Steward

**4. Resources**
*Programs must identify resources within their own budget for managing the data they produce.*

**4.1. Have resources for management of these data been identified?**

**4.2. Approximate percentage of the budget for these data devoted to data management ( specify percentage or "unknown"):**

**5. Data Lineage and Quality**
*NOAA has issued Information Quality Guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information which it disseminates.*

**5.1. Processing workflow of the data from collection or acquisition to making it publicly**

**accessible**

*(describe or provide URL of description):*

Process Steps:

- 2013-10-01 00:00:00 - Bathymetry datasets within the Northeast Reserve area of interest were acquired through the NGDC data viewer and were vertically referenced to the NOAA MLLW tidal datum. The Bathymetry datasets were used to create three bathymetry models (resolution 4m, 20m, and 100m) using kriging in Surfer. The three layers were stacked with the highest resolution on top and merged to one multiresolution surface. Simple kriging in ArcGIS was used to minimize the edge interpolation effects between the three models. The stacked multiresolution bathymetry model and uncertainty surface was up-sampled to 4m resolution using a spline function to create the final bathymetry model. | Source Produced: NEPR Bathymetry Model - 4m (Citation: NEPR Bathymetry Model - 4m)
- 2013-10-01 00:00:00 - The NEPR Bathymetry model was processed using the ArcGIS Spatial Analyst Toolbox into derivative morphometric layers: slope, slope of slope, rugosity, curvature, curvature profile, curvature plan, standard deviation, and mean bathymetry. The morphometric layers were then stacked into a 9 layer raster dataset in Envi 5.1, which was then used for the principle component analysis. | Source Produced: NEPR Morphometric Layers - 4m (Citation: NEPR Bathymetry Model - 4m)
- 2013-11-01 00:00:00 - The stacked morphometric layers were then statistically analyzed by the eigenvalues for covariance in Envi 5.1. This combines all of the layers and shows the variations and complexity of the seafloor terrain, which highlights the different habitats. The result was a 3-band geotiff image. The PCA image was then used to delineate features and help create the benthic habitat map. | Source Produced: NEPR Principle Component Analysis - 4m (Citation: NEPR Morphometric Layers - 4m)

**5.1.1. If data at different stages of the workflow, or products derived from these data, are subject to a separate data management plan, provide reference to other plan:**

**5.2. Quality control procedures employed (describe or provide URL of description):**

## 6. Data Documentation

*The EDMC Data Documentation Procedural Directive requires that NOAA data be well documented, specifies the use of ISO 19115 and related standards for documentation of new data, and provides links to resources and tools for metadata creation and validation.*

**6.1. Does metadata comply with EDMC Data Documentation directive?**

No

**6.1.1. If metadata are non-existent or non-compliant, please explain:**

Missing/invalid information:

- 1.7. Data collection method(s)
- 4.1. Have resources for management of these data been identified?
- 4.2. Approximate percentage of the budget for these data devoted to data management
- 5.2. Quality control procedures employed
- 7.1. Do these data comply with the Data Access directive?
- 7.1.1. If data are not available or has limitations, has a Waiver been filed?
- 7.1.2. If there are limitations to data access, describe how data are protected
- 7.3. Data access methods or services offered
- 7.4. Approximate delay between data collection and dissemination
- 8.1. Actual or planned long-term data archive location
- 8.3. Approximate delay between data collection and submission to an archive facility
- 8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?

**6.2. Name of organization or facility providing metadata hosting:**

NMFS Office of Science and Technology

**6.2.1. If service is needed for metadata hosting, please indicate:**

**6.3. URL of metadata folder or data catalog, if known:**

https://inport.nmfs.noaa.gov/inport/item/38778

**6.4. Process for producing and maintaining metadata**

*(describe or provide URL of description):*

Metadata produced and maintained in accordance with the NMFS Data Documentation Procedural Directive: http://www.nmfs.noaa.gov/op/pds/documents/04/111/04-111-01.pdf

**7. Data Access**

*NAO 212-15 states that access to environmental data may only be restricted when distribution is explicitly limited by law, regulation, policy (such as those applicable to personally identifiable information or protected critical infrastructure information or proprietary trade information) or by security requirements. The EDMC Data Access Procedural Directive contains specific guidance, recommends the use of open-standard, interoperable, non-proprietary web services, provides information about resources and tools to enable data access, and includes a Waiver to be submitted to justify any approach other than full, unrestricted public access.*

**7.1. Do these data comply with the Data Access directive?**

**7.1.1. If the data are not to be made available to the public at all, or with limitations, has a Waiver (Appendix A of Data Access directive) been filed?**

**7.1.2. If there are limitations to public data access, describe how data are protected from unauthorized access or disclosure:**

**7.2. Name of organization of facility providing data access:**
National Centers for Coastal Ocean Science

**7.2.1. If data hosting service is needed, please indicate:**

**7.2.2. URL of data access service, if known:**

**7.3. Data access methods or services offered:**

**7.4. Approximate delay between data collection and dissemination:**

**7.4.1. If delay is longer than latency of automated processing, indicate under what authority data access is delayed:**

## 8. Data Preservation and Protection

*The NOAA Procedure for Scientific Records Appraisal and Archive Approval describes how to identify, appraise and decide what scientific records are to be preserved in a NOAA archive.*

**8.1. Actual or planned long-term data archive location:**
*(Specify NCEI-MD, NCEI-CO, NCEI-NC, NCEI-MS, World Data Center (WDC) facility, Other, To Be Determined, Unable to Archive, or No Archiving Intended)*

**8.1.1. If World Data Center or Other, specify:**

**8.1.2. If To Be Determined, Unable to Archive or No Archiving Intended, explain:**

**8.2. Data storage facility prior to being sent to an archive facility (if any):**
National Centers for Coastal Ocean Science - Silver Spring, MD

**8.3. Approximate delay between data collection and submission to an archive facility:**

**8.4. How will the data be protected from accidental or malicious modification or deletion prior to receipt by the archive?**
*Discuss data back-up, disaster recovery/contingency planning, and off-site data storage relevant to the data collection*

## 9. Additional Line Office or Staff Office Questions

*Line and Staff Offices may extend this template by inserting additional questions in this section.*